

FROM PROBLEM TO RESOURCE TO BEER

Telling the story of water one pint at a time

May 5, 2016

Mark Poling
Clean Water Services

CleanWater  Services

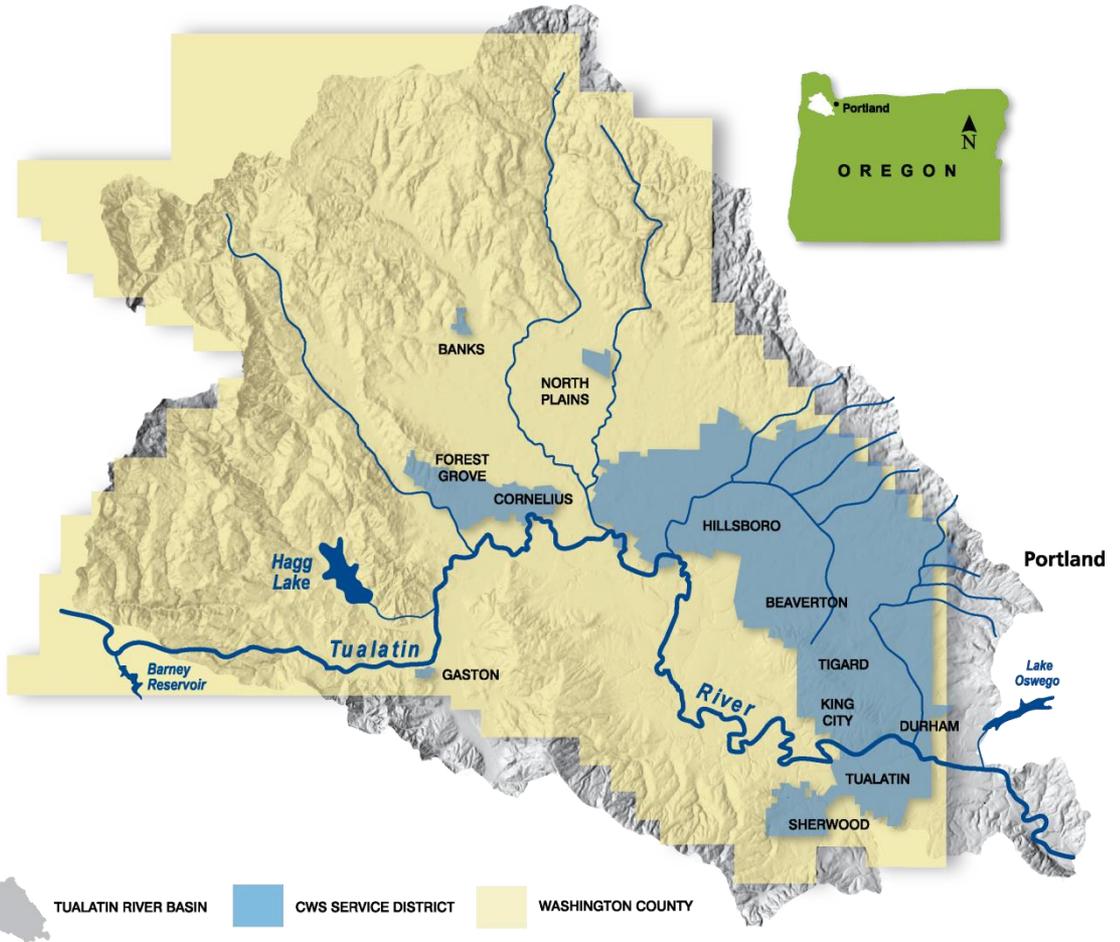


CLEAN WATER SERVICES

- Established in 1970
- Water resources management utility serving more than 560,000 residents of urban Washington County
- 12 Partner Cities
- Budget: \$64.6M Operating/\$66M Capital
- Close working relationship with Washington County, but a separately managed and financed public utility



TUALATIN RIVER WATERSHED



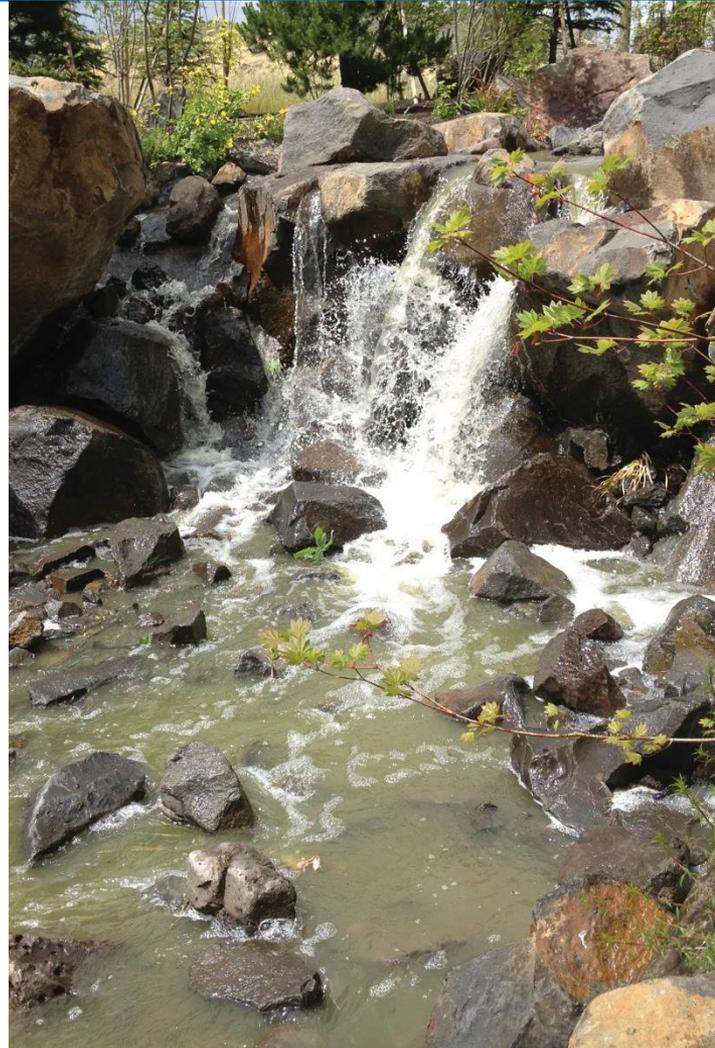
PROBLEM...Solution?



RESOURCE



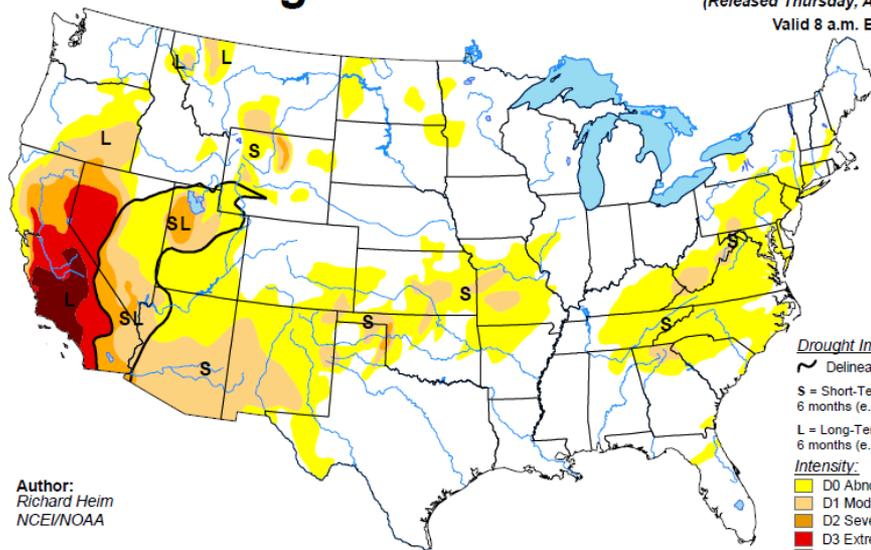
RESOURCE



Need for Water

U.S. Drought Monitor

April 26, 2016
(Released Thursday, Apr. 28, 2016)
Valid 8 a.m. EDT



Author:
Richard Heim
NCEI/NOAA

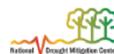
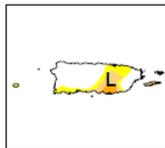
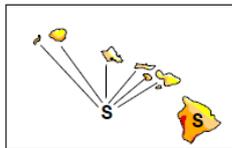
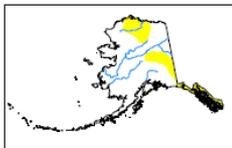
Drought Impact Types:

- ~ Delineates dominant impacts
- S = Short-Term, typically less than 6 months (e.g. agriculture, grasslands)
- L = Long-Term, typically greater than 6 months (e.g. hydrology, ecology)

Intensity:

- Yellow: D0 Abnormally Dry
- Light Orange: D1 Moderate Drought
- Orange: D2 Severe Drought
- Dark Orange: D3 Extreme Drought
- Dark Red: D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.



<http://droughtmonitor.unl.edu/>



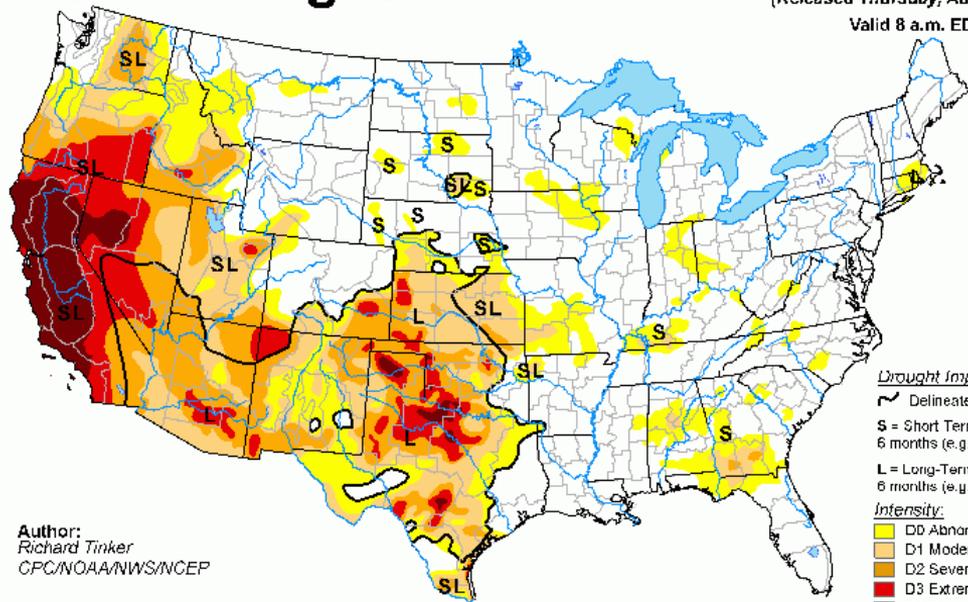
Less than 2 years ago

U.S. Drought Monitor

August 19, 2014

(Released Thursday, Aug. 21, 2014)

Valid 8 a.m. EDT



Author:
Richard Tinker
CPC/NOAA/NWS/NCEP

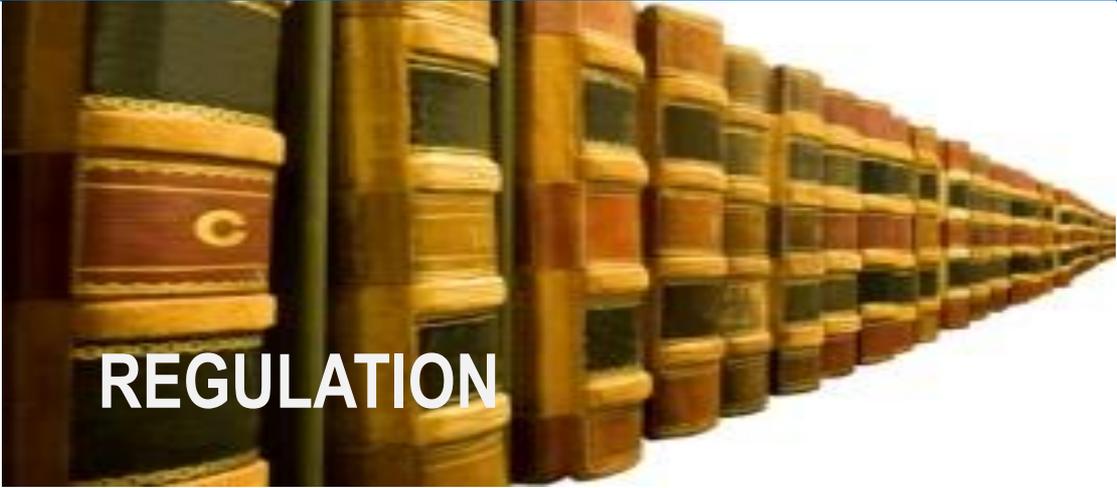


FUTURE...WATER FIT FOR PURPOSE



FUTURE...WATER FIT FOR PURPOSE

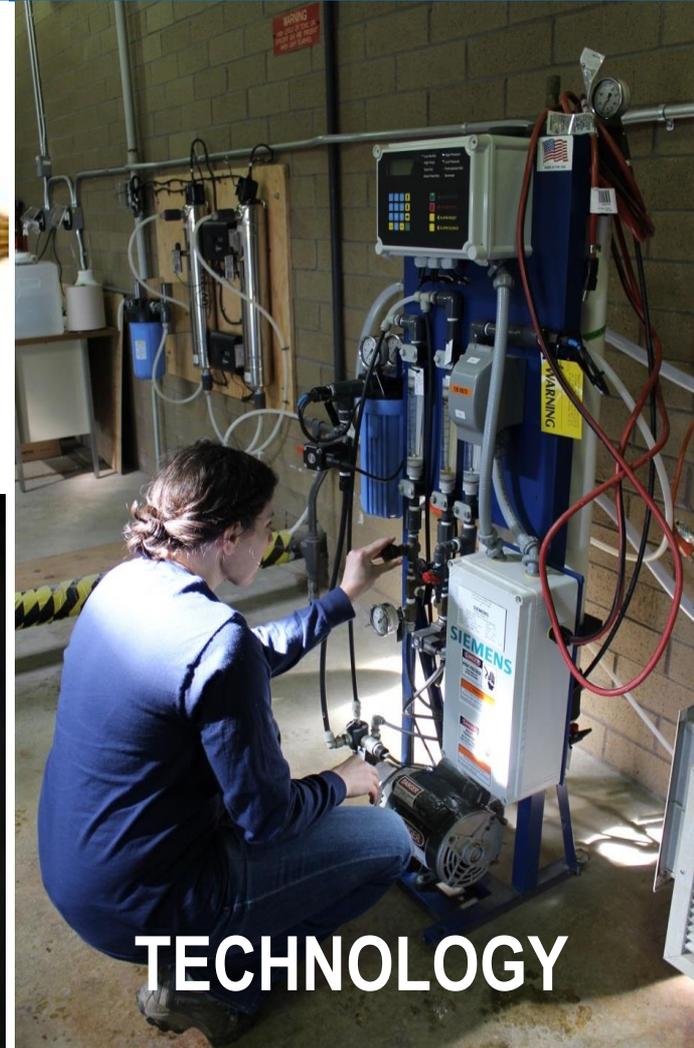




REGULATION

change your
MINDSET

MINDSET



The Future is now - BEER!

OREGON BREW CREW · CLEAN WATER SERVICES · CAROLLO · IMPERIAL YEAST

*"Water should not be judged by its history,
but by its quality." — Dr. Lucas Van Vuuren*

Quality not History

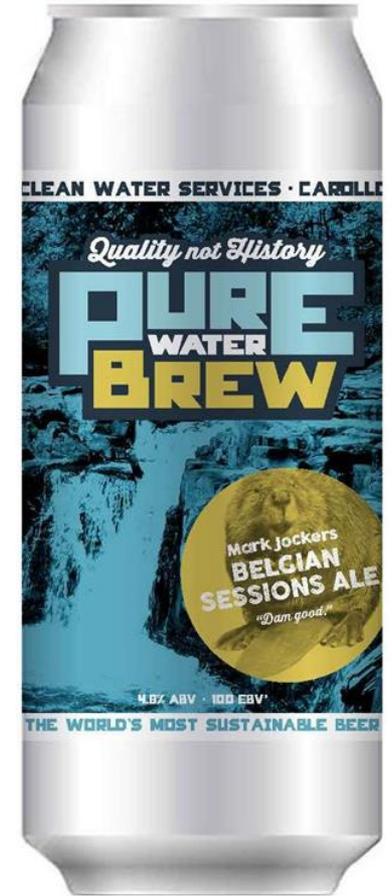
**PURE
WATER
BREW**

Mark Jockers
**BELGIAN
SESSIONS ALE**
"Dam good."

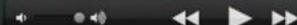
4.8% ABV · 100 EBV*

#PUREWATERBREW **THE WORLD'S MOST SUSTAINABLE BEER** ***EFFLUENT BY VOLUME**

WARNING: (1) ALL WATER HAS BEEN CONSUMED BEFORE AND WILL BE CONSUMED AGAIN. (2) THIS WATER IS MORE THAN 4.6 BILLION YEARS OLD. (3) ALL WATER ASPIRES TO BE BEER.



EDUCATION: ONE PINT AT A TIME





TODAY



TEAMCOCO,
teamcoco.com



In Oregon, a number of brewers are competing to turn sewer water into beer. The brewers said, "Hey, if Bud Light can do it, we can do it!"

Conan O'Brien, April 30, 2015

THE TIME IS NOW

- Demands are growing
- Technology exists
- Drought and climate change have started the conversation
- It's time to update reuse rules



Cheers!



SMACKDOWN!





Extra slides from this point on...



Thank you to
our sponsors

Quality not History

PURE
WATER
BREW

THE WORLD'S MOST SUSTAINABLE BEER

CleanWater  Services


Engineers...Working Wonders With Water™



evoqua
WATER TECHNOLOGIES

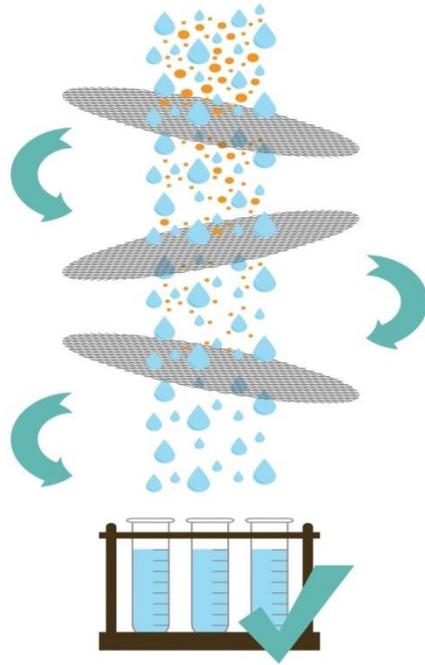


IMPERIAL
ORGANIC YEAST



**Oregon's Oldest
Homebrew Club**
Established 1979

HIGH PURITY WATER PROCESS

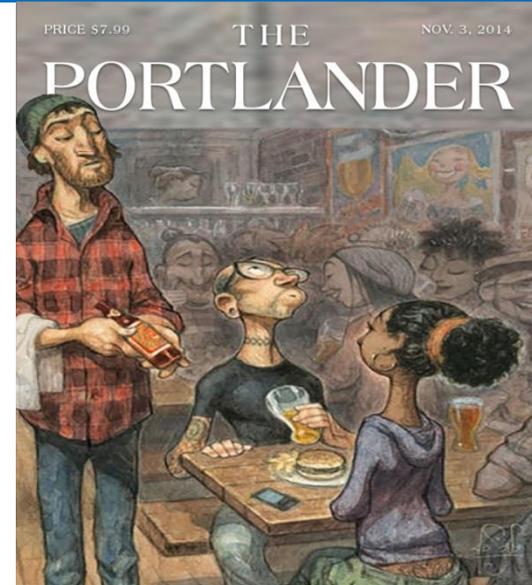


- 1 Ultrafiltration**
Membranes remove bacteria, protozoan and some trace pathogen.
- 2 Reverse Osmosis**
Membranes remove salt, organics, trace pollutants and remaining pathogens.
- 3 Disinfection/Advanced Oxidation**
Removes trace pollutants and pathogens.
- 4 Meets all drinking water standards**



High Purity Water/Pure Water Brew

- Demystify water purification and the urban water cycle
- Showcase innovative water technology to inform how water can be used
- Bolster Oregon's reputation as an innovator
- Start a conversation about the nature of water





**The water is safe but,
haunted by its history**



From: DEQ Online Subscriptions [<mailto:ordeq@public.govdelivery.com>]

Sent: Tuesday, January 20, 2015 9:09 AM

To: jockersm@cleanwaterservices.org

Subject: Request for Comments on Recycling Water for Drinking Uses

DEQ is currently accepting comments on a proposed approval for Clean Water Services limited reuse of recycled water for use in an alcoholic beverage.

Documents that describe this proposal can be found at
<http://www.oregon.gov/deq/docs/022015drinkable.pdf>.

Written comments due: 5 p.m., Friday, February 20, 2015.

Need more information?

Contact Avis Newell
Phone: 503-229-6018 or 800-452-4011
Fax: 503-229-6957
Email: Newell.Avis@deq.state.or.us

SUBSCRIBER SERVICES:

[Manage Subscriptions](#) | [Unsubscribe All](#) | [Help](#)



npr news arts & life music topics programs listen

the salt WHAT'S ON YOUR PLATE

eating and health foodways producers food for thought for foodies

food for thought

Why Dump Treated Wastewater When You Could Make Beer With It?

JANUARY 28, 2015 11:06 AM ET

50 comments

Transforming sewage into beer? Science behind Oregon brewers' plan

OREGONLIVE The Oregonian

Subscribe

Sign in

FoodBev.com

Home News M...

Looking for a beer made from actual human piss? Urine luck.

by Charley Cameron, 01/31/15

filed under: News, Recycling / Compost, Water Issues

Share On Facebook Twitter Pin it

brewers want to an beer

Is Sewage Beer The Next Big Thing?

The Huffington Post | By Alison Spiegel

Posted: 02/03/2015 7:00 am EST | Updated: 02/07/2015 11:59 am EST



100 15 0 0 0

Like Share Tweet Pin it Comment

WSJ WSJ LIVE REALTECH.COM MARKETS MEMBERSHIP WSJ LOG IN

THE WALL STREET JOURNAL. ≡

WSJ LIVE

News, Quotes, Companies, Video

LOG IN

A-HED

Why West Coast Recyclers Think Sewage Water Might Make Good Beer

Cities take recycling efforts to new heights with 'sewage brewage' and extreme composting. 'It's not garbage anymore.'

From The Atlantic

CITYLAB

NAVIGATOR

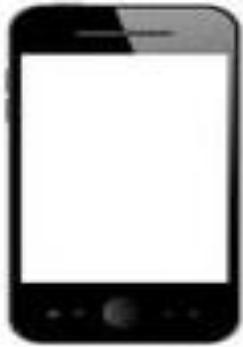
COMMUTE WORK HOUSING

Oregon Homebrewers Get Set to Experiment With 'Sewerage' Brewerage'

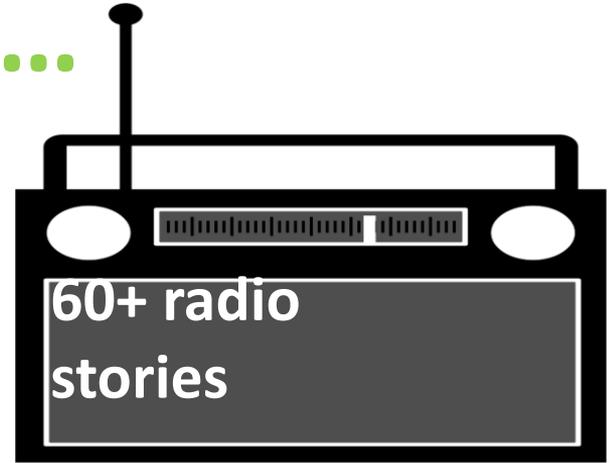
Portland will get to show off just how good its super-pure recycled wastewater is.



WITHIN THREE WEEKS...



More than 150 newspapers,
magazines and online news
sites



It's all a matter of perception. ALL of the water we use, has been recycled, over and over again, by nature. Which is something we SHOULD be paying more attention to—OPB Radio



I get a laugh at the toilet-to-tap crowd.
"Purify wastewater and drink it?! That is disgusting! Purify wastewater, pump it into the ground, pump it back out of the ground, now that is acceptable....

--Facebook comment



from our column: **FREE RANGE**

Don't Call It Stinky Stout—Brewing Beer From Sewage Water Is an Idea Worth Toasting

Sure, this idea from a wastewater treatment company may sound gross, but the plan really makes a lot of sense.



(Photo: John Lund/Sam Diephuis/Getty Images)

January 28, 2015 | *By Jason Best*



Jason Best is a regular contributor to TakePart who has worked for Gourmet and the Natural Resources Defense Council.

[» full bio](#)

If you live anywhere that gets any portion of its water supply from a river, you're likely already drinking "recycled wastewater," as the treated sewage from towns upstream gets cycled through your own municipal water system.

Thus, in the running competition to come up with a name for Portland's newfangled brew, here's a suggestion: Just call it beer.



#purewaterbrew

WARNING: (1) ALL WATER HAS BEEN CONSUMED BEFORE AND WILL BE CONSUMED AGAIN. (2) THIS WATER IS MORE THAN 4.6 BILLION YEARS OLD. (3) ALL WATER ASPIRES TO BE BEER.

CleanWater  Services



carollo
Engineers... Working Wonders With Water®


IMPERIAL
ORGANIC YEAST

#purewaterbrew

